

SCIENCE

NEW SERIES. VOLUME XLIX

JANUARY-JUNE, 1919

NEW YORK
THE SCIENCE PRESS
1919

1000

THE NEW ERA PRINTING COMPANY,
41 NORTH QUEEN STREET,
LANCASTER, PA.

CONTENTS AND INDEX.

NEW SERIES. VOL. XLIX.—JANUARY TO JUNE, 1919

THE NAMES OF CONTRIBUTORS ARE PRINTED IN SMALL CAPITALS

- ABETTI, G., Intellectual Intercourse between Nations, 369
 ADAMS, C. C., Roosevelt Wild-Life Forest Ex. Sta., 533
 AGASSIZ, L., Smithsonian Institution, 300
 Agricultural Production in the United States, 16
 Airplane, Fuel, 302; in Surveying, E. L. JONES, 575
 ALLEE, W. C., Amer. Assoc. for Adv. of Sci., Section F, 100
 ALLEN, E. W., Amer. Assoc. Adv. Sci., Section M—Agriculture, 219
 ALLEN, F. H., and F. A. LOVEJOY, Ice Formation, 119
 Alphabet, A Standard, J. C. RUPPENTHAL, 191; A. FANTI, 356
 American, Association for the Advancement of Science, Address of the President, 1; Baltimore Meeting, 11; Addresses of the Vice-presidents, Section D, 27; Section H, 53; Section E, 77; Section F, 101; Section A, 127; Section B, 155; Section C, 175; Section G, 199; Zoology, W. C. ALLEE, 100; Scientific Organization, 112; Report of the Treasurer, 122; Geology and Geography, R. T. CHAMBERLIN, 124; Anthropology and Psychology, E. K. STRONG, JR., 125; Committee on Grants, J. STEBBINS, 211; Policy, L. O. HOWARD, 474; Agriculture, E. W. ALLEN, 219; Symposium, Section G, G. T. MOORE, 269; G. R. LYMAN, 339; J. M. COULTER, 363; Pacific Division, 483, 599; Museum of Natural History, H. F. OSBORN, 477
 Amphibioides, C. L. HUBBS, 569
 Anatomy, German Terms in, F. T. LEWIS, 307; Renaissance, R. L. MOODIE, 472
 Antarctic Expedition, 536
 Anthropological, Assoc., Amer., 76; Research, F. BOAS, A. HRDLÍČKA, A. M. TOZZER, 426; Explorations of Alaska, 491
 Arizona, Field Work in, F. M. PERRY, 357
 ARTHUR, J. C., Research as a University Function, 387
 Astronomical Union, J. STEBBINS, 508
 Atkinson, George Francis, 230; H. M. FITZPATRICK, 371
 ATWELL, W. J., Pigmentation in Frog Larva, 48
 Auroral Display, E. KARRER, E. P. T. TYNDALL, 495; G. I. GAVETT, 496; C. F. BROOKS, 542
 Aviation, Psychological Research in, K. DUNLAP, 94, 215; E. L. THORNDIKE, 215
 Aviator, Physiology of, Y. HENDERSON, 431
 B. Coli Index, W. F. WELLS, 400
 Bacteriology and Public Health, 511
 Baird, John Wallace, E. B. TITCHENER, 393
 BAKER, F. C., North American Lymnaeidae, 519
 BARNES, P. T., Fireflies Flashing in Unison, 72
 Barrell, Joseph, C. SCHUCHERT, 605
 BARRUS, M. F., Potato Diseases, 542
 BARUS, C., Spectrum Phenomena and Moving Motes, 72; Herschell's Fringes, 385
 Base Hospital No. 21, 511
 BASSLER, R. S., Paleontological Soc., 50
 BAUER, L. A., Solar Eclipse of May 29, 1919
 Bee, Queen, Mating, L. V. FRANCE, 72
 Belgium, An Appeal from, P. P. CALVERT, 264
 BERRY, E. W., Eucalyptus, 91
 Biological, Literature, F. A. SPRAGG, 23; Surveys, 38; Summer Stations, 466
 Biologists, Experimental, E. D. BROWN, 517
 Biology, High-school, 443
 Bird Reserves, Gaspé, J. M. CLARKE, 350
 Birth Rate, British, 402
 Bison for Museums, H. I. SMITH, 517
 Blackboard Illumination, P. F. GAEHR, 265
 Blanchard, Raphael, F. H. GARRISON, 391
 Blarigham, Professor, Lectures by, 374
 BOAS, F., A. HRDLÍČKA, A. M. TOZZER, Anthropological Research, 426
 Botanical, Abstracts, J. R. SCHRAMM, 195; Science, B. E. LIVINGSTON, 199; Participation in War Work, G. T. MOORE, 269; Soc. of Amer., Generic Types, A. S. HITCHCOCK, 333; Opportunity, J. M. COULTER, 363; Dictionary, Pritzel's, 395
 Botany, Kinds, the World Needs, G. J. PEIRCE, 81; American, Unification of, G. R. LYMAN, 339
 Brain Power in the Army, 221, 251
 BRAUN, H., Presoaking and Seed Injury, 544
 BRIGHAM, G. R., Trilobites, C. D. WALCOTT, 543
 British, Guiana Research Station, 231; Antarctic Expedition, W. H. DALL, 265; Natural History Museum, 323
 BRITTON, W. E., Injurious Insects, F. L. WASHBURN, 425
 BROOKS, C., Protein Antigens, 196
 BROOKS, C. F., Auroral Display, 542
 BROWN, E. D., Experimental Biologists, 517
 BUDINGTON, R. A., William Erskine Kellicott, 322
 BURGE, W. E., Oxidation in the Body, 594
 C., L., Amer. Assoc. of Variable Star Observers, 243
 CAIRNS, W. C., Mathematical Assoc. of Amer., 97
 Calendar, A Steady, W. M. DAVIS, 171
 California Academy of Sciences, 609
 CALVERT, P. P., An Appeal from Belgium, 264
 CAMERON, A. E., Gastrophilus Nasalis L., 26
 Cardium Corbis, C. H. EDMONDSON, 402
 Cary, M., Life Zone Investigations, H. C. OBERHOLSER, 312
 Cawthron Institute, 490
 Census Bureau, 38
 CHAMBERLIN, R. T., Geology and Geography, 124
 CHAMBERS, R., G. H. A. CLOWES, R. S. LILLIE, Mustard Gas, 382

- Chemical, Soc., Amer., 164; Buffalo Meeting, 280;
C. L. PARSONS, 570, 595, 618; Elements, Age of,
I. W. D. HACKH, 328; Warfare Service, J. J.
PERSHING, 512; Industries, National Exposition
of, 559
Chemistry, and Medicine, J. STIEGLITZ, 31; Corpo-
ration, 352; Inter-allied Cooperation in, 535;
Colloid, and Soap, M. H. FISCHER, 615
Citrus Canker, H. A. LEE, and E. D. MERRILL, 499
Civil Service, Examinations, 210; Estimates, Brit-
ish, 420
CLAYCOMB, G. B., "Wave of Life," 424
CLOWES, G. H. A., R. CHAMBERS, R. S. LILLIE,
Mustard Gas, 382
CORLENTZ, W. W., Nonsilverable Containers, 192
COCKERELL, T. D. A., Sir Joseph Hooker, 525
COLE, F. N., Amer. Math. Soc., 523
COLEMAN, W. M., Keeping Step, 380
Continents, Tectonic Form of the, C. KEYES, 612
Color Crosses, H. F. ROBERTS, 516
Concrete in Shipbuilding, 419
Conservation, H. S. DRINKER, 27
Cory, C. B., Birds of the Americas, H. C. OBER-
HOLSER, 93
COTTON, C. A., Geomorphology, 423
COULTER, J. M., Botanical Opportunity, 363
CRAWLEY, E. S., Charles Leander Doolittle, 302
CROZIER, W. J., Tropisms, J. Loeb, 171
Culture Experiments, D. R. HOAGLAND, 360
- DABNEY, T. G., Frost Effects, 310
DALL, W. H., Antarctic Expedition, British, 265
DAVIS, B. M., Amer. Soc. of Naturalists, 75
DAVIS, C. W., and S. C. LIND, Uranium Ore, 441
DAVIS, W. M., Lantern Slides of N. France, 23;
Reminiscences, R. Pumpelly, 61; A Steady Cal-
endar, 171
DEAN, B., Charles Rochester Eastman, 139; Dr.
Moodie's Opisthotonus, 357
DEARBORN, N., David Ernest Lantz, 84
Desmognathus Fuscus, P. C. MITCHELL, W. E.
HOYLE, 283
Difference-tones, P. F. GAEHR, 122
Discussion and Correspondence, 23, 43, 70, 91, 119,
146, 169, 191, 214, 236, 264, 283, 307, 328, 356,
377, 400, 422, 447, 470, 495, 516, 541, 564, 589,
612
Disease of Foxtail, H. H. ROSEN, 291
Dissection of Large Specimens, J. M. LONG, 120
Distinguished Service Medals, 467
DONALDSON, H. H., Medicine and Growth, 315
Doolittle, Charles Leander, E. S. CRAWLEY, H. B.
EVANS, S. G. BARTON, 302
DRINKER, H. S., Conservation, 27
DUNLAP, K., Psychological Research in Aviation, 94
DURRANT, E. P., and R. J. SEYMOUR, Vitamin
Tests, 448
Duty Free Supplies, T. B. FREAS, and W. L. ESTA-
BROOKE, 417
Dye Industry, British, 163
- Eastman, Charles Rochester, B. DEAN, 139
EATON, H. N., Limestones in Pennsylvania, 474
Eclipse, Total, of the Sun, 558; 607
EDMONDSON, C. H., Cardium Corbis, 402
Edward K. Warren Foundation, A. G. RUTHVEN, 17
Egg-Weight and Production, P. HADLEY, 427;
-Yolk Media, G. F. WHITE, 362
- Eigenmann, C. H., Pygidiidae, A. S. PEARSE, 403
Electro-Thermo-Regulator for Water Baths, C. I.
HALL, 214
Ernst, A., Bastardierung, H. DE VRIES, 381
ESTABROOKE, W. L., Freas System, 506; and T. B.
FREAS, Duty Free Supplies, 417
Eucalyptus, E. W. BERRY, 91
Evolution and Origin of Man, W. K. GREGORY, 267
- FANTI, A., A Standard Alphabet, 356
Farm, Management, 351
FARRINGTON, O. C., Precious Stones, F. B. WADE,
217
Fatigue, Industrial, 86
FINK, C. G., Electroanalysis, E. F. SMITH, 332
Fireflies Flashing in Unison, P. T. BARNES, 72
FISCHER, M. H., Colloid Chemistry and Soap, 615
Fisheries, College of, at Seattle, 279
Fishes, Vertebrae in, and Temperature, D. S. JOR-
DAN, 336
FITZPATRICK, H. M., George Francis Atkinson, 371
Flying, Human, M. E. WADSWORTH, 379
Folk-lore Soc., Amer., 76
Forest, Service, 141; Recreation, 491; Preserva-
tion, 584
Foresters, Amer., Soc. of, P. D. KELLETER, 126
FOX, P. J., Foundations of Mechanics, 44
FRANCE, L. V., Queen Bee Mating, 72
Freas System, W. L. ESTABROOKE, 506
FREAS, T. B., and W. L. ESTABROOKE, Duty Free
Supplies, 417
Frog Larva, W. J. ATWELL, 48
Frost Effects, T. G. DABNEY, 310
- GAEHR, P. F., Difference-tones, 122; Illumination
of Blackboards, 265
GAGER, C. S., Horticulture as a Profession, 293
GARRISON, F. H., Raphael Blanchard, 391
Gas, Mustard, R. S. LILLIE, G. H. A. CLOWES, R.
CHAMBERS, 382; History of, C. J. WEST, 412;
Poison, Use of, H. LEFFMANN, 472
Gastrophilus Nasalis L., A. E. CAMERON, 26
GAVETT, G. I., Auroral Display, 1919, 496
Generic Limitations, O. A. STEVENS, 71; Determi-
nations of Bees, C. ROBERTSON, 422
Geodetic and Geodynamic Institute, British, 489
Geological Soc. of Amer., E. O. HOVEY, 173
Geomorphology, C. A. COTTON, 423
German Science after the War, 395
Glassware Industry, British, 85
GOODSPEED, A. W., Amer. Philos. Soc., 545
Government Grants for Scientific Research, 591
Green, Gabriel Marcus, W. F. OSGOOD, 534
GREGORY, H. E., Professor Williams at Yale, 63
GREGORY, W. K., Origin and Evolution of Man, 267
GRIGGS, R. F., Katmai National Monument, 236
Grinnell, H. W., Bats of California, W. P. TAYLOR,
193
Grinnell, J., H. C. Bryant, T. I. Storer, Game Birds
of California, W. S., 498
GUDGER, E. W., Monkeys to pick Coco Nuts, 146
GUNTHER, H., Hay-fever and National Flower,
147
- HACKH, I. W. D., Age of Chemical Elements, 328
HADLEY, P., Egg-Weight and Production, 427
HALL, C. I., Electro-Thermo-Regulator for Water
Baths, 214

- HALL, E. H., Wallace Clement Ware Sabine, 347
HAMPSON, G. F., Systematic Papers in German, 193
Harvard, Appointments at, 444
HAWK, P. B., Desiccated Vegetables, 329
HAY, O. P., Proboscideans of New York, 377
Health, Public, and the University, G. E. VINCENT, 245; British Ministry of, 278; Degrees in, 325
HENDERSON, Y., Physiology of the Aviator, 431
Herds, Depleted, of England, France and Italy, 66
Herschell's Fringes, C. BARUS, 385
HILDEBRANDT, F. M., Physical Improvements in Army Men, 404
Historical Science, G. A. MILLER, 447
History of Science, G. SARTON, 497
HITCHCOCK, A. S., Botanical Soc. of Amer., 333
HOAGLAND, D. R., Culture Experiments, 360
Honorary Degrees at Yale, 610
Hooker, Sir Joseph, T. D. A. COCKERELL, 525
Horticulture as a Profession, C. S. GAGER, 293
HOUSTON, D. F., Sulphonic Acids, 265
HOVEY, E. O., Geological Soc. of Amer., 173
HOWARD, L. O., Polyembryony and Encyrtidae, 43; Laboratory and Government Zoologists, 453; Amer. Assoc. for Adv. of Sci., Committee on Policy, 474
HOYLE, W. E., Desmognathus Fuscus, 283
HUBBS, C. L., The Amphibioidae, 569
HUDSON, R. G., Celluloid Lantern Slides, 120
HUMPHREYS, W. T., Physics of the Air, 155, 182
HUNTER, A. F., Industrial Research in Ontario and Prussia, 208

Ice Formation, E. A. LOVEJOY, and F. H. ALLEN, 119
Ill. State Acad. of Sci., J. L. PRICER, 451
Indianaite, W. N. LOGAN, 197
Influenza, and Pneumonia, Deaths from, 142; History of, 216; Epidemic, E. W. KOPF, 228; Infection, G. T. PALMER, 288; How to Avoid, 311; Germs, 372
Intellectual Intercourse between Nations, G. ABETTI, 369
Inventions, British War, 394
Inyo Range and Mount Whitney Region, 324
Isis, Publication of, G. SARTON, 170
IVES, H. E., Nonsilverable Containers, 330

Japan, Physical and Chemical Research for, 65
JENNINGS, O. E., Baltimore Meeting of Amer. Assoc. for the Adv. of Sci., 11
JONES, E. L., The Airplane in Surveying and Mapping, 57
JORDAN, D. S., Temperature and Vertebrae in Fishes, 336
Journal of "Natural History," 325

K., Paris Academy of Sciences, 404
Kansas, State Agricultural College, 396; Acad. of Sci., E. A. WHITE, 476
KARRER, E., and E. P. T. TYNDALL, Auroral Display, 495
Katmai National Monument, 15; R. F. GRIGGS, 236
KELLETER, P. D., Soc. of Amer. Foresters, 126
Kellicott, William Erskine, R. A. BUDINGTON, 322
KEYES, C., Tectonic Form of the Continents, 612
Kilauea Volcano, 188
Klein, L. A., Milk Hygiene, L. F. RETTGER, 25
KNIPP, C. T., Cutting Pyrex Glass, 450
KNOPF, A., Mineral Deposits of S. A., B. L. MILLER, 518
KOPF, E. W., Influenza Epidemic, 228

Lands, Classification of, 210
LANGFELD, H. S., Amer. Psychol. Assoc., 51
Lantern Slides of Northern France, W. M. DAVIS, 23; Celluloid, R. G. HUDSON, 120
Lantz, David Ernest, N. DEARBORN, 84
Lead, Radioactive, T. W. RICHARDS, 1
Le Conte Memorial Lecture, 537
LEE, H. A., and E. D. MERRILL, Citrus Canker, 499
LEFFMANN, H., Use of Poison Gas, 472
LEWIS, F. T., German Terms in Anatomy, 307; Contributions to Embryology, F. P. MALL and others, 359
Lille Society of Science, C. D. WALCOTT, 70
LILLIE, R. S., G. H. A. CLOWES, R. CHAMBERS, Mustard Gas, 382
Limestones in Pennsylvania, H. N. EATON, 474
LIND, S. C., and C. W. DAVIS, Uranium Ore, 441
LITTLE, H. P., Flowing Artesian Well, 24
LIVINGSTON, B. E., Botanical Science, 199
Loeb, J., Tropisms, W. J. CROZIER, 171
LOGAN, W. N., Indianaite, 197
London Imperial College, 209
LONG, J. M., Dissection of Large Specimens, 120
Long, John Harper, J. STIEGLITZ, 31
LOVEJOY, F. A., and F. H. ALLEN, Ice Formation, 119
LOWY, A., Aliphatic Series of Organic Chemistry, 313
LYMAN, G. R., Unification of American Botany, 339
Lymnaeidae, North American, F. C. BAKER, 519

M., A., Wind and Barometric Pressure, Sir Napier Shaw, 285
McAtee, W. L., Natural History of the District of Columbia, H. C. OBERHOLSER, 568
MACCAUGHEY, V., Tropical Enervation, 44; Sugar Technology in Hawaii, 582
McCLUNG, C. E., Elementary Zoology, 345
MACDOUGAL, D. T., Growth in Organisms, 599
MALL, F. P., and others, Contributions to Embryology, F. T. LEWIS, 359
Mammalogists, 189; Amer. Soc. of, 374
Map, of Brazil, 259; of U. S., 536
Mapping from the Air, 559
Mathematical, Assoc. of Amer., W. D. CAIRNS, 97; Soc., Amer., F. N. COLE, 523
Mechanics, Foundations of, P. J. FOX, 44
Medical, Research in Australia, 230; Association, British, 260; Assoc., Amer., Publications, 585; Foreign Delegates, 609
Medicine, Inter-allied Fellowships of, 115; and Growth, H. H. DONALDSON, 315; International Cooperation in, 558; Future of, 566
Medieval Institutions, 188
Mellon Institute Fellowships, 462
Mendelian Phenomena, L. H. MILLER, 148
MERRILL, E. D., and H. A. LEE, Citrus Canker, 499
METCALF, C. L., Ocular of the Microscope, 310
METCALF, M. M., Scientific Spirit, 551
Meteorite, The Richardton, T. T. QUIRKE, 92; Cumberland Falls, A. M. MILLER, 541
Metric Assoc., Amer., 291

- MEYER, A. W., A Suggestion from Plato, 530
 Microscope, Ocular of the, C. L. METCALF, 310
 MILLER, A. M., Cumberland Falls Meteorite, 541
 Miller, B. L., Mineral Deposits of S. America, A. KNOFF, 518
 MILLER, G. A., Professor Ludvig Sylow, 85; Common Numerals, 215; *Revista Matematica*, 608; *Historical Science*, 447
 MILLER, L. H., Mendelian Phenomena, 148
 MILLER, W. J., Silixite, 149
 MILLER, D. C., Amer. Physical Soc., 197
 Mineral Deposits in the U. S., 465
 Mining Engineers, Amer. Inst. of, 143
 MITCHELL, P. C., *Desmognathus Fuscus*, 283
 Monkeys to pick Coco Nuts, E. W. GUDGER, 146
 MOODIE, R. L., Renaissance Anatomy, 472
 MOORE, G. T., Botanical Participation in War Work, 269
 MOORE, R. B., Radium Production, 564
 MORGAN, J. L. R., Stoichiometry, S. Young, 46
 Morgan, Lewis Henry, Memorial to, 163
- National Acad., Proceedings, E. B. WILSON, 46; of Sci., 286, 429, 444; Flower and Hay-fever, H. GUNTHER, 147; W. SCHEPPEGRELL, 284; Research Council, 374
 Naturalists, Amer. Soc. of, B. M. DAVIS, 75; Western Soc. of, 149
 Nebraska Acad. of Sci., 500
 NEEDHAM, J. C., Laboratory and Government Zoologists, 453
 NELSON, E. W., Laboratory and Government Zoologists, 409
 NEUMANN, F., History of Sciences in U. S., 330
 NEWCOMER, H. S., The Extinction Coefficient, 241
 Nitrate and the War, 66
 Nonsilverable Containers, W. W. COBLENTZ, 192; H. E. IVES, 330
 NOYES, W. A., Valence, 175
 Numerals, Common, G. A. MILLER, 215
 NUNN, R., Tennessee Acad. of Sci., 150
 NUTTING, P. G., Optical Soc. of Amer., 52
- OBERHOLSER, H. C., Birds of the Americas, C. B. Cory, 93; Life Zone Investigations, M. Cary, 312; Natural History of the District of Columbia, W. L. McAtee, 568
 Opisthotonus, Dr. Moodie's, B. DEAN, 357
 Optical Soc. of Amer., P. G. NUTTING, 52
 Organic Chemistry, Aliphatic Series, A. LOWY, 313
 Organisms, Growth in, D. T. MACDOUGAL, 599
 OSBORN, H., Zoological Aims and Opportunities, 101
 OSBORN, H. F., Samuel Wendell Williston, 274; American Museum of Natural History, 477; Zoologica, 592
 OSGOOD, W. F., Gabriel Marcus Green, 534
 Oxidation in the Body, W. E. BURGE, 594
- Pacific Division of A. A. A. S., 483, 599
 Paleontological Soc., R. S. BASSLER, 50
 PALMER, G. T., Influenza Infection, 288
 Pandemic, Lessons of the, G. A. SOPER, 501
 Paris Academy of Sciences, K., 404
 Parks, State, for Iowa, 87
 PARSONS, C. L., Amer. Chem. Soc., Buffalo Meetings, 570, 595, 618
 Patent Reform, B. RUSSELL, 356
 PEARSE, A. S., Pygidiidae, C. H. EIGENMANN, 403
- PEIRCE, G. J., Kinds of Botany the World Needs, 81
 PERKINS, G. H., Physiography of Vermont, 77
 PERRY, F. M., Field Work in Arizona, 357
 PERSHING, J. J., Chemical Warfare Service, 512
 Personnel Work, Scientific, in Army, E. L. THORNDIKE, 53
 Petroleum Geologists, 337
 PHILLIPS, H. B., Relativity of Motion, R. C. Tolman, 148
 Philosophical Soc., Amer., A. W. GOODSPEED, 545
 Photometer, Sector, and Extinction Coefficient, H. S. NEWCOMER, 241
 Physical, Amer., Soc., D. C. MILLER, 197; Improvements in Army Men, F. M. HILDEBRANDT, 404
 Physics of the Air, W. J. HUMPHREYS, 155, 182
 Physiography of Vermont, G. H. PERKINS, 77
 Physiology of a Working Day, 424
 Phytopathological, Amer., Soc., C. L. SHEAR, 174
 Pickering, Edward Charles, H. N. RUSSELL, 151
 Pigeon, Passenger, F. R. WELSH, 402
 Pink Root of Onions, J. J. TAUBERHAUS, 217
 Plato, A Suggestion from, A. W. MEYER, 530
 Polyembryony and Encyrtidae, L. O. HOWARD, 43
 POOR, C. L., Astronomy, C. A. Young, 614
 Potato Diseases, M. F. BARRUS, 542
 PRICER, J. L., Ill. State Acad. of Sci., 451
 Proboscideans of New York, O. P. HAY, 377
 Protein Antigens, C. BROOKS, 196
 Psychiatry and the War, W. H. R. RIVERS, 367
 Psychological Assoc., Amer., H. S. LANGFELD, 51
 Psychology, Applied, E. B. TITCHENER, 169; Division of, 512
 Pumpelly, R., Reminiscences, W. M. DAVIS, 61
 Putnam, Dr. James Jackson, H. P. WALCOTT, C. C. JACKSON, E. W. EMERSON, E. H. BRADFORD, M. STORY, 352
 Pyrex Glass, Cutting, C. T. KNIPP, 450
- Quicksilver in 1918, Production of, 116
 QUIRKE, T. T., The Richardton Meteorite, 92
 Quotations, 216, 239, 311, 358, 380, 402, 424, 448, 497, 566, 591
- Radioactive Lead, T. W. RICHARDS, 1
 Radium Production, C. H. VIOL, 227; MOORE, R. B., 564
 RAINES, M. A., Rotary Vertigo in the Tail-Spin, 266
 Ramsay Memorial Fund, 586
 Research, Industrial, in Ontario and Prussia, A. F. HUNTER, 208; in Great Britain, 239, 380, 497; as a University Function, J. C. ARTHUR, 387; Aeronautical, 448; Council, National, 458; Fellowships, 462
 Reservations, Wild Life, A. G. RUTHVEN, 17
 RETTGER, L. F., Milk Hygiene, L. A. Klein, 25
Revista Matematica Hispano-Americana, G. A. MILLER, 608
 REYNOLDS, E. S., Root Pressure and Root Exudation, 70
 RICHARDS, T. W., Radioactive Lead, 1
 Ritter, W. E., Philosophical Biology, W. P. TAYLOR, 449
 RIVERS, W. H. R., Psychiatry and the War, 367
 ROBERTS, H. F., Color Crosses, 516
 ROBERTSON, C., Generic Determinations of Bees, 422
 Rockefeller Foundation, 87, 302
 Roosevelt, Theodore, and American Foresters, 114; Wild-life Forest Exp. Sta., C. C. ADAMS, 533

- Root Pressure and Root Exudation, E. S. REYNOLDS, 70
- ROSEN, H. H., Disease of Foxtail, 291
- RUPPENTHAL, J. C., A Standard Alphabet, 191
- RUSSELL, B., Patent Reform, 356
- RUSSELL, H. N., Variable Stars, 127; Edward Charles Pickering, 151
- RUTHVEN, A. G., Wild Life Reservations, 17
- S., W., Game Birds of Calif., J. Grinnell, H. C. Bryant, and T. I. Storer, 498
- Sabine, Wallace Clement Ware, E. H. HALL, C. N. GREENOUGH, P. W. BRIDGMAN, 347
- Salt Requirements of Plants, 143
- SARTON, G., Publication of *Isis*, 170
- SCHACKE, M. A., *Sphaerocarpos Texanus*, 218
- SCHEPPEGRELL, W., Hay Fever, 284
- SCHRAMM, J. R., Botanical Abstracts, 195
- SCHUCHERT, C., Papers from the Department of Marine Biology, 121; Joseph Barrell, 605
- Science in the British Parliament, 358
- Sciences, History of, in U. S., F. NEUMANN, 330
- Scientific, Events, 15, 38, 65, 85, 114, 141, 163, 188, 209, 230, 259, 278, 302, 323, 350, 372, 394, 419, 443, 465, 489, 510, 535, 558, 584, 607; Notes and News, 19, 40, 67, 88, 116, 144, 165, 189, 211, 232, 261, 281, 303, 326, 353, 375, 396, 421, 445, 467, 492, 513, 538, 561, 586, 610. Books, 25, 46, 93, 121, 148, 171, 193, 217, 265, 285, 312, 332, 359, 381, 403, 425, 449, 472, 498, 518, 543, 568, 592, 614; Organization and A. A. A. S., 112; Spirit, M. M. METCALF, 551; Instruments, Early, 584
- Seed Injury, H. BRAUN, 544
- SEYMOUR, R. J., and E. P. DURRANT, Vitamin Tests, 448
- Shaw, Sir Napier, Wind and Barometric Pressure, A. M., 285
- SHEAR, C. L., Amer. Phytopathological Soc., 174
- Sheffield Scientific School and Yale University, 18
- SHIPLEY, J. W., Valley of Ten Thousand Smokes, 589
- Silexite, W. J. MILLER, 149
- Smell, Deficiencies in, C. R. STOCKARD, 237
- SMITH, C. A., Utah Acad. of Sci., 475
- Smith, E. F., Electroanalysis, C. G. FINK, 332
- SMITH, H. L., Bison for Museums, 517
- Smith Herbert Huntington, W. J. HOLLAND, 481
- Smithsonian Institution, L. AGASSIZ, 300
- Solar Eclipse of May 29, 1919, L. A. BAUER, 260
- SOPER, G. A., Lessons of the Pandemic, 501
- Sound and Flash Ranging, A. TROWBRIDGE, 521
- Special Articles, 26, 48, 72, 94, 122, 148, 196, 217, 241, 266, 288, 313, 336, 360, 385, 404, 427, 450, 474, 499, 521, 544, 569, 594, 615
- Spectrum Phenomena and Moving Motes, C. BARUS, 72
- Sphaerocarpos Texanus*, M. A. SCHACKE, 218
- SPRAGG, F. A., Biological Literature in English, 23
- Standards, Bureau of, 39
- Stars, Variable, H. N. RUSSELL, 127
- STEBBINS, J., Committee on Grants of Amer. Assoc. for the Advancement of Sci., 211; Astronomical Union, 508
- Step, Keeping, W. M. COLEMAN, 380
- STEVENS, O. A., Generic Limitations, 71
- STIEGLITZ, J., Chemistry and Medicine, 31
- STOCKARD, C. R., Deficiencies in Smell, 237
- STRONG, E. K., Jr., Anthropology and Psychology, 125
- Sugar Cane, Immune, C. O. TOWNSEND, 470; Technology in Hawaii, V. MACCAUGHEY, 582
- Sulphonic Acids, D. F. HOUSTON, 265
- Sylov, Professor Ludvig, G. A. MILLER, 85
- Systematic Papers in German, G. F. HAMPSON, 193
- TAUBENHAUS, J. J., Pink Root of Onions, 217
- TAYLOR, W. P., Bats of California, H. W. Grinnell, 193; Philosophical Biology, W. E. Ritter, 449
- Tennessee Academy of Science, R. NUNN, 150
- THORNDIKE, E. L., Scientific Personnel Work in Army, 53; and K. DUNLAP, Psychological Research for Aviators, 215
- TITCHENER, E. B., Applied Psychology, 169. John Wallace Baird, 393
- Tolman, R. C., Relativity of Motion, H. B. PHILLIPS, 148
- TOWNSEND, C. O., Immune Sugar Cane, 470
- Tropical Enervation, V. MACCAUGHEY, 44
- TROWBRIDGE, A., Sound and Flash Ranging, 521
- TRUE, R. H., P. G. AGNEW, Union of Scientific Federal Employees, 487
- TYNDALL, E. P. T., E. KARRER, Auroral Display of May 2, 1919
- Union of Scientific Federal Employees, R. H. TRUE, P. G. AGNEW, 487
- University and Educational News, 22, 43, 69, 91, 119, 146, 169, 191, 214, 236, 263, 283, 307, 328, 355, 377, 400, 422, 447, 470, 495, 515, 540, 563, 589, 611
- Uranium Ore, S. C. LIND, and C. W. DAVIS, 441
- Utah Acad. of Sci., C. A. SMITH, 475
- Valence, W. A. NOYES, 175
- Valley of Ten Thousand Smokes, J. W. SHIPLEY, 589
- Van Hise, President, in Memory of, 114
- Variable Star Observers, Amer. Assoc. of, L. C., 243
- Vegetables, Desiccated, P. B. HAWK, 329
- Vertigo, Rotary, in the Tail-Spin, M. A. RAINES, 266
- VINCENT, G. E., The University and Public Health, 245
- VIOL, C. H., Radium Production, 227
- Vitamin Tests, R. J. SEYMOUR, and E. P. DURRANT, 448
- VRIES, H. DE, Bastardierung, A. Ernst, 381
- Wade, F. B., Precious Stones, O. C. FARRINGTON, 217
- WADSWORTH, M. E., Human Flying, 379
- WALCOTT, C. D., Lille Society of Sciences, 70
- Walcott, C. D., Trilobites, G. R. BRIGHAM, 543
- War Researches at St. Andrews University, 510
- Washburn, F. L., Injurious Insects, W. E. BRITTON, 425
- "Wave of Life," G. B. CLAYCOMB, 424
- Well, Artesian, Flowing, H. P. LITTLE, 24
- WELLS, W. F., B. Coli Index, 400
- WELSH, F. R., Passenger Pigeon, 402
- WHITE, E. A., Kansas Acad. of Sci., 476
- WHITE, G. F., Egg-Yolk Media, 362
- Williams, Professor, at Yale, H. E. GREGORY, 63
- Williston, Samuel Wendell, H. F. OSBORN, 274

Zoologica, H. F. OSBORN, 592
Zoological Aims and Opportunities, H. OSBORN, 101
Zoologists, Amer. Soc. of, 98; Laboratory and
Government, E. W. NELSON, 409; L. O. HOWARD,
453; J. G. NEEDHAM, 455
Zoology, Elementary, C. E. McCLUNG, 345

WILSON, E. B., Proceedings of the Nat. Acad. of
Sci., 46, 286

Young, C. A., Lessons and Elements of Astronomy,
C. L. POOR, 614

Young, S., Stoichiometry, J. L. R. MORGAN, 46

